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BASIC
IMAGERY
INTERPRETATION
REPORT

NATIONAL PHOTOGRAPHIC
INTERPRETATION CENTER

MOTOVSKIY GULF MHD GENERATOR SITE (S)

[redacted]

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STRATEGIC WEAPONS INDUSTRIAL FACILITIES
USSR
JULY 1979

[redacted]

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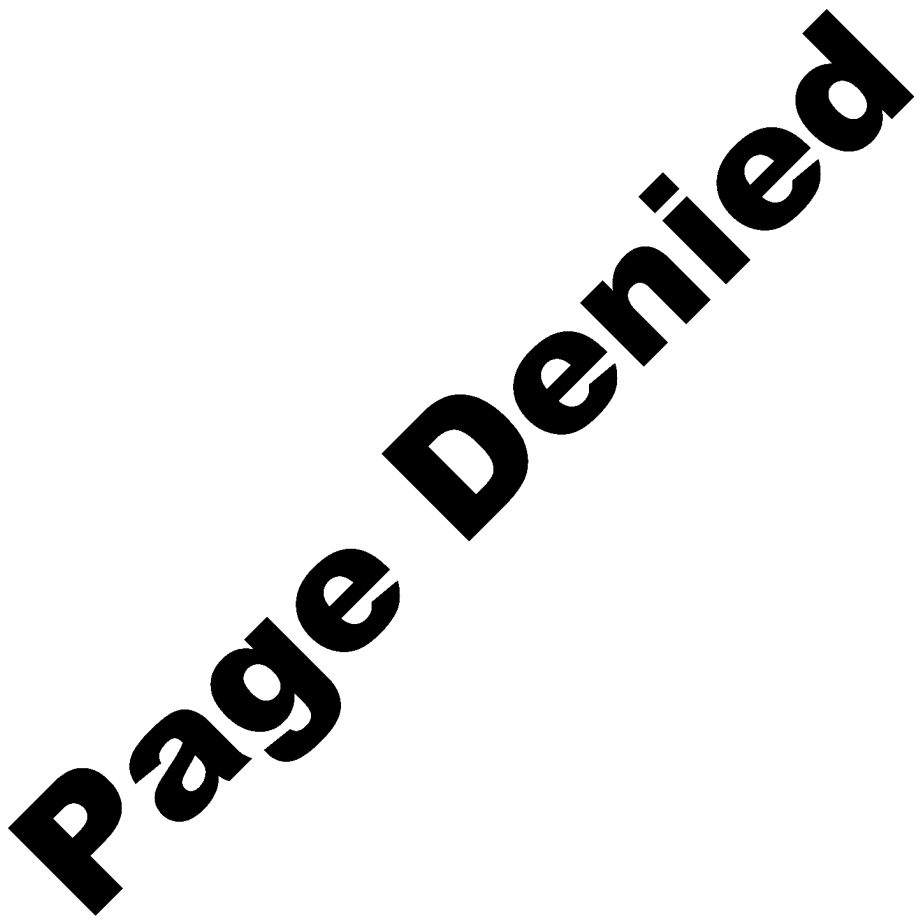

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INSTALLATION OR ACTIVITY NAME					COUNTRY
Motovskiy Gulf MHD Generator Site					UR
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	69-37-30N 031-56-43E				

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MAP REFERENCE

DMA. USATC, Series 200, Sheet 0051-12, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
	NA

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ABSTRACT

1. (S/WNINTEL) This report describes the Motovskiy Gulf Magnetohydrodynamic (MHD) Generator Site, which is situated on the Kola Peninsula in the Barents Sea, in the Soviet Union. This facility appears to be suitable as an experimental site for both geophysical and extremely low frequency communications research. The site contains two MHD generators, which could transmit a large pulse current into the rock strata and into the seawater on either side of the Kola Peninsula. Three annotated photographs are also included in this report, which is the first basic report on this target.

INTRODUCTION

2. (TSR) The Motovskiy Gulf MHD Generator Site is situated on the tip of the Kola Peninsula in the Barents Sea, approximately 48 nautical miles northwest of Murmansk, in the Soviet Union. This facility appears to be suitable as an experimental site for both geophysical and extremely low frequency communications research. When used for either purpose, MHD electric power generators could be used to transmit and propagate a large pulse of current into the rock strata and into the seawater on either side of the Kola Peninsula. Such signals can be detected at great distances, are very difficult to jam, and could be used in submarine communications.

3. (U) Powerful magnets and an MHD channel make up a generator. The magnets create strong fields around the channels. Rocket motors produce highly ionized gas which passes through these channels. The interaction between the ionized exhaust gas and the magnetic fields creates an electrical pulse, which can be transmitted to electrodes via large cables.

BASIC DESCRIPTION

4. (TSR) The Motovskiy Gulf MHD Site consists of two disk-shaped MHD generators in an operations area, two electrode emplacements, and a support area (Figure 1). The electrode emplacements are approximately 0.5 and 7 kilometers (km) away from the operations area, along the shorelines of the approximately 6-km-wide isthmus upon which the

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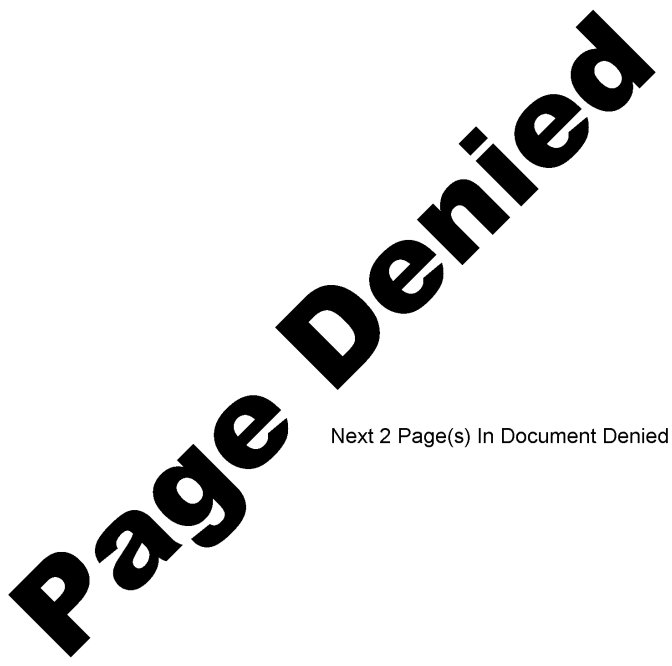

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facility is built. Each electrode emplacement is in an unsecured area on the beach. Large cables connect the emplacements to the MHD generators in the operations area (Figure 2). The two MHD generators are on a pad in front of an earthen berm, which serves as a thrust block for the rocket motors. In addition to the MHD generators, three support sheds and a large open storage area are also within this area. The operations area was constructed between [redacted] and appeared to have been operational on [redacted] 25X1 25X1

5. (TSR) The support area (Figure 3) was first observed under construction in July 1975 and was apparently operational by March 1976. Four cylindrical probable POL tanks, five small buildings, at least three tents, and an open storage area are within the support area. The buildings and tents probably serve as barracks and covered storage space. Several crates, which may have contained MHD channels or other components, have been observed in the open storage area.

REFERENCES

IMAGERY

(TSR) All applicable KEYHOLE imagery acquired from [redacted] was used in preparation of this report. 25X1 25X1

MAPS OR CHARTS

DMA. US Air Target Chart, Series 200, Sheet 0051-12, scale 1:200,000 (UNCLASSIFIED)

REQUIREMENT

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Project 290028DJ

(S) Comments and queries regarding this report are welcome. They may be directed to [redacted] Soviet Strategic Forces Division, Imagery Exploitation Group, NPIC, [redacted] 25X1 25X1

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